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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,274	10/15/2001	Hyun-Soo Park	P56597	9123

7590 06/03/2005

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EXAMINER	
WANG, JIN CHENG	
ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/976,274	PARK, HYUN-SOO	
	Examiner	Art Unit	
	Jin-Cheng Wang	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 2/11/2005.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's submission filed on 02/11/2005 has been entered. Claims 1-13, and 15 have been amended. Claims 16-20 have been newly added. Claims 1-20 are pending in the application.

Response to Arguments

Applicant's arguments filed Nov. 12, 2004 have been fully considered but are moot in view f the new ground(s) of rejection of the amended claim 1 and the newly submitted claims16-20. As addressed below, the claim 1 is unpatentable over Cheney et al. U.S. Pat. No. 6,519,283 (hereinafter Cheney '283) and Cheney et al. U.S. Patent No. 6,469,743 (hereinafter Cheney '743). For example, Cheney '283 discloses signal dispensing unit dispensing a first personal computer signal output from a personal computer in the form of a first analog signal directly from said personal computer wherein Cheney discloses in column 3, lines 22-40 that the uncompressed analog video can be derived from a computer with TV output and therefore, the computer has a signal-dispensing unit dispensing a computer output signal in the form of a first analog signal (see also figures 2-5; column 3, lines 22-40; column 5; column 6, lines 7-25; column 7, lines 19-37). Cheney discloses an analog to digital converter converting the first analog signal from said signal dispensing unit of said personal computer to a first digital signal of said personal computer wherein Cheney discloses in column 6, lines 51-67 that an EGV including **the video decoder** receives an uncompressed signal is received from a second video source and may either comprise another analog signal wherein Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video signal can be derived from a computer with TV output. The video

decoder performs an analog to digital conversion. For example, Cheney '283 further discloses in column 7, lines 1-18 a DMSD 105 digitizing the analog signal for input to the integrated digital video decode system 100 and therefore DMSD 105 performs an analog to digital conversion of the first analog signal (See also figures 2-5; column 5; column 6, lines 25-67). Cheney discloses signal processing unit (the video decode system 100 of Figs. 4 and 6) performing picture-in-picture signal processing enabling one of the first digital personal computer signal dispensed by said signal dispensing unit through said analog to digital converter wherein "the other picture" as described in Cheney '283 meets the claim limitation of "the first digital personal computer signal" coming through the DMSD 105 or EGV port. Cheney further discloses a decoded second signal as a second digital signal input from an outside source in which the decoded signal 101 from a first video source such as a cable or satellite source (see Cheney '283 column 6, lines 35-50) to be displayed on a main screen and the other to be displayed on at least one sub-screen in which "the other picture" is described in Cheney '283 as is the digital signal from the DMSD 105 or EGV port (see column 6, lines 51-67). Cheney further discloses a signal processing unit processing said second digital signal to be displayed alone on said main screen, said second digital signal being any one of a television signal and a video signal wherein the video decode system 100 processing the signal from the EGV port or DMSD 105 which is the uncompressed signal received from a second video source and may either comprise another digital signal or an analog signal (see column 6, lines 51-67 and column 3, lines 22-40).

Cheney discloses digital to analog converter converting a digital output signal of said signal processing unit into a second analog signal. Cheney discloses in column 8, lines 7-32 an encoder DENC macro for encoding the merged picture-in-picture video stream including both

the decompressed digital video and the uncompressed video to television format and therefore DENC encoding a digital output signal of the video decode system 100 into an analog signal to be output to a television.

Cheney discloses an output unit (e.g., the output 110 of Fig. 4) directly connected to said digital to analog converter (directly connected to DENC 107 of Fig. 4) and connected to said signal dispensing unit and the output unit 110 is connected to the computer TV output via the decoder system chip for receiving the analog video signal 104 from the computer TV output unit which dispenses the analog video signal of said personal computer, receiving said first analog signal from said signal dispensing unit because Cheney discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72). Cheney further discloses outputting the first analog signal dispensed from said signal dispensing unit in response to a control signal for displaying only the first personal computer signal because Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72).

Cheney also discloses outputting said second analog signal from said digital output signal of said signal processing unit in response to a control signal for displaying first personal computer signal and said second signal in picture-in-picture format because Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72). Finally Cheney discloses a monitor amplifying (A TV monitor automatically amplifying the signal to be displayed) said signal output from the outputting unit to be displayed (*e.g., figure 3-5; column 6, lines 25-67; column 9, lines 15-67; column 10, lines 1-67; column 11, lines 1-5*).

It is unclear whether Cheney '283 teaches an outputting unit directly connected to said signal dispensing unit of said personal computer. However, Cheney '283 discloses that the analog video signal 104 is received by the decoder system chip 100 and directly being forwarded to the output 110 because Cheney '283 discloses in column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72. Although the output 110 is not visually directly connected to the signal dispensing unit, there is a direct mechanism/connection

between the signal source (i.e., the computer signal having TV output) and the output 110 so that the video signal is being forwarded. Forwarding means that the video signal from the dispensing unit is being directly sent to the output unit 110.

Moreover, Cheney '743 teaches an outputting unit outputting said analog personal computer signal generated from said signal dispensing unit, where said signal dispensing unit dispenses an output signal output from a personal computer in the form of an analog signal (See Cheney '743 column 11-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the video decode system chip of Cheney '743 into the Cheney '283 because Cheney '283 suggests a video decode system chip incorporating an EGV port into an integrated digital video decode system such as a set-top box to process uncompressed analog video stream, to synchronize the output video/audio presentation to the stream and to mix/blend graphics into the output video stream, which may either comprise the uncompressed analog video stream or a merged picture-in-picture video stream including both the decompressed digital video and the uncompressed video wherein the blended stream is then output to the **internal** digital video encoder macro for encoding to television format and thus the analog channel is presented with the same graphical features, function and programming model capabilities as existing digital channels utilizing the integrated digital decode system (Cheney '283 column 8, lines 7-32).

Such modification would have been would have provided a means to use a clock tied to the input stream results in better output picture quality since dropping/repeating of frames to maintain synchronization is minimized (Cheney '743 column 10-11) and the configuration

provides a means to deliver analog sourced input channel such as the analog computer signal to the internal DENC and provides a mixed mode video set-top box application to support viewing conventional analog channels without the added cost and complexity (Cheney '743 column 11).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "said switching unit" in line 5 of the claim. There is insufficient antecedent basis for this limitation in the claim. Claims 7-9 are rejected due to their dependency on the claim 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheney et al. U.S. Pat. No. 6,519,283 (hereinafter Cheney '283) and Cheney et al. U.S. Patent No. 6,469,743 (hereinafter Cheney '743).

1. Claim 1:

Cheney '283 teaches an apparatus for processing a signal (e.g., column 4, lines 28-57), comprising:

A signal dispensing unit dispensing a first personal computer signal output from a personal computer in the form of a first analog signal directly from said personal computer (*e.g., Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video can be derived from a computer with TV output and therefore, the computer has a signal-dispensing unit dispensing a computer output signal in the form of a first analog signal; see also figures 2-5; column 3, lines 22-40; column 5; column 6, lines 7-25; column 7, lines 19-37*);

An analog to digital converter converting the first analog signal from said signal dispensing unit of said personal computer to a first digital signal of said personal computer (*e.g., Cheney '283 discloses in column 6, lines 51-67 that an EGV including* ***the video decoder*** *receives an uncompressed signal is received from a second video source and may either comprise another analog signal wherein Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video signal can be derived from a computer with TV output. The video decoder performs an analog to digital conversion. For example, Cheney '283 further discloses in column 7, lines 1-18 a DMSD 105 digitizing the analog signal for input to the integrated digital video decode system 100 and therefore DMSD 105 performs an analog to digital conversion of the first analog signal. See also figures 2-5; column 5; column 6, lines 25-67*);

A signal processing unit (the video decode system 100 of Figs. 4 and 6) performing picture-in-picture signal processing enabling one of the first digital personal computer signal

dispensed by said signal dispensing unit through said analog to digital converter (*"the other picture" as described in Cheney '283 which is the digital signal from the DMSD 105 or EGV port*) and a decoded second signal as a second digital signal input from an outside source (*the decoded signal 101 from a first video source such as a cable or satellite source; see Cheney '283 column 6, lines 35-50*) to be displayed on a main screen and the other to be displayed on at least one sub-screen (*"the other picture" as described in Cheney '283 which is the digital signal from the DMSD 105 or EGV port; see column 6, lines 51-67*), and said signal processing unit processing said second digital signal to be displayed alone on said main screen, said second digital signal being any one of a television signal and a video signal (the video decode system 100 processing the signal from the EGV port or DMSD 105 which is the uncompressed signal received from a second video source and may either comprise another digital signal or an analog signal; see column 6, lines 51-67 and column 3, lines 22-40);

A digital to analog converter converting a digital output signal of said signal processing unit into a second analog signal (*Cheney '283 discloses in column 8, lines 7-32 an encoder DENC macro for encoding the merged picture-in-picture video stream including both the decompressed digital video and the uncompressed video to television format and therefore DENC encoding a digital output signal of the video decode system 100 into an analog signal to be output to a television*);

An output unit (e.g., the output 110 of Fig. 4) directly connected to said digital to analog converter (directly connected to DENC 107 of Fig. 4) and connected to said signal dispensing unit (*connected to the computer TV output for receiving the analog video signal 104 from the computer TV output unit which dispenses the analog video signal*) of said personal computer,

receiving said first analog signal from said signal dispensing unit (*Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72*), outputting the first analog signal dispensed from said signal dispensing unit in response to a control signal for displaying only the first personal computer signal (*Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72*), and outputting said second analog signal from said digital output signal of said signal processing unit in response to a control signal for displaying first personal computer signal and said second signal in picture-in-picture format (*Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72*); and

A monitor amplifying (A TV monitor automatically amplifying the signal to be displayed) said signal output from the outputting unit to be displayed (*e.g., figure 3-5; column 6, lines 25-67; column 9, lines 15-67; column 10, lines 1-67; column 11, lines 1-5*).

It is unclear whether Cheney '283 teaches an outputting unit directly connected to said signal dispensing unit of said personal computer. However, Cheney '283 discloses that the analog video signal 104 is received by the decoder system chip 100 and directly being forwarded to the output 110 because Cheney '283 discloses in column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72. Although the output 110 is not visually directly connected to the signal dispensing unit, there is a direct mechanism/connection between the signal source (i.e., the computer signal having TV output) and the output 110 so that the video signal is being forwarded. Forwarding means that the video signal from the dispensing unit is being directly sent to the output unit 110.

Moreover, Cheney '743 teaches an outputting unit outputting said analog personal computer signal generated from said signal dispensing unit, where said signal dispensing unit dispenses an output signal output from a personal computer in the form of an analog signal (See Cheney '743 column 11-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the video decode system chip of Cheney '743 into the Cheney

'283 because Cheney '283 suggests a video decode system chip incorporating an EGV port into an integrated digital video decode system such as a set-top box to process uncompressed analog video stream, to synchronize the output video/audio presentation to the stream and to mix/blend graphics into the output video stream, which may either comprise the uncompressed analog video stream or a merged picture-in-picture video stream including both the decompressed digital video and the uncompressed video wherein the blended stream is then output to the **internal** digital video encoder macro for encoding to television format and thus the analog channel is presented with the same graphical features, function and programming model capabilities as existing digital channels utilizing the integrated digital decode system (Cheney '283 column 8, lines 7-32).

Such modification would have been would have provided a means to use a clock tied to the input stream results in better output picture quality since dropping/repeating of frames to maintain synchronization is minimized (Cheney '743 column 10-11) and the configuration provides a means to deliver analog sourced input channel such as the analog computer signal to the internal DENC and provides a mixed mode video set-top box application to support viewing conventional analog channels without the added cost and complexity (Cheney '743 column 11).

Claim 2:

The claim 2 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of the first analog signal being outputted from said signal dispensing unit being included in said personal computer, with said personal computer sending the first analog signal to said analog to digital converter being directly connected to said signal dispensing unit

of said personal computer, and said personal computer sending the first analog signal to said outputting unit being directly connected to said signal dispensing unit of said personal computer.

However, Cheney '283 and Cheney '743 further disclose the claimed limitation of the first analog signal being outputted from said signal dispensing unit being included in said personal computer, with said personal computer sending the first analog signal to said analog to digital converter being directly connected to said signal dispensing unit of said personal computer (e.g., Cheney '283 figure 2 and column 6, lines 1-50 and Cheney '743 column 10-12 and Figs. 9-11 wherein *e.g., Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video can be derived from a computer with TV output and therefore, the computer has a signal-dispensing unit dispensing a computer output signal in the form of a first analog signal. Cheney '283 discloses in column 6, lines 51-67 that an EGV including* ***the video decoder*** *receives an uncompressed signal is received from a second video source and may either comprise another analog signal wherein Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video signal can be derived from a computer with TV output. The video decoder performs an analog to digital conversion. For example, Cheney '283 further discloses in column 7, lines 1-18 a DMSD 105 digitizing the analog signal for input to the integrated digital video decode system 100 and therefore DMSD 105 performs an analog to digital conversion of the first analog signal. See also figures 2-5; column 5; column 6, lines 25-67*).

It is unclear whether Cheney '283 teaches an outputting unit directly connected to said signal dispensing unit of said personal computer. However, Cheney '283 discloses that the analog video signal 104 is received by the decoder system chip 100 and directly being forwarded to the output 110 because Cheney '283 discloses in column 7, lines 19-38 that the host processor

can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72. Although the output 110 is not visually directly connected to the signal dispensing unit, there is a direct mechanism/connection between the signal source (i.e., the computer signal having TV output) and the output 110 so that the video signal is being forwarded. Forwarding means that the video signal from the dispensing unit is being directly sent to the output unit 110.

Moreover, Cheney '743 teaches an outputting unit outputting said analog personal computer signal generated from said signal dispensing unit, where said signal dispensing unit dispenses an output signal output from a personal computer in the form of an analog signal (See Cheney '743 column 11-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the video decode system chip of Cheney '743 into the Cheney '283 because Cheney '283 suggests a video decode system chip incorporating an EGV port into an integrated digital video decode system such as a set-top box to process uncompressed analog video stream, to synchronize the output video/audio presentation to the stream and to mix/blend graphics into the output video stream, which may either comprise the uncompressed analog video stream or a merged picture-in-picture video stream including both the decompressed digital video and the uncompressed video wherein the blended stream is then output to the **internal** digital video encoder macro for encoding to television format and thus the analog

channel is presented with the same graphical features, function and programming model capabilities as existing digital channels utilizing the integrated digital decode system (Cheney '283 column 8, lines 7-32).

Such modification would have been would have provided a means to use a clock tied to the input stream results in better output picture quality since dropping/repeating of frames to maintain synchronization is minimized (Cheney '743 column 10-11) and the configuration provides a means to deliver analog sourced input channel such as the analog computer signal to the internal DENC and provides a mixed mode video set-top box application to support viewing conventional analog channels without the added cost and complexity (Cheney '743 column 11).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of a decoding unit converting the second signal into a digital signal and decoding the second signal; a scan rate conversion unit converting a scan rate of the decoded second signal as the second digital signal; and a signal processing unit performing a picture-in-picture signal process on the second signal whose scan rate is converted and the digital personal computer signal, accommodating one of the second signal and the digital personal computer signal is displayed on the main screen and the other of the second digital signal and said first digital personal computer signal is displayed on the plurality of sub-screens, or for processing the second signal to be displayed along on the main screen.

However, Cheney '283 further discloses the claimed limitation of claimed limitation of a decoding unit converting the second signal into a digital signal and decoding the second signal

(e.g., Cheney '283 figures 2-5; column 5-6; column 7, lines 19-67; column 8, lines 1-67; column 9, lines 1-67); a scan rate conversion unit converting a scan rate of the decoded second signal as the second digital signal (e.g., Cheney '283 figures 3-6; column 7, lines 19-67; column 8, lines 1-67; column 9, lines 1-8); and a signal processing unit performing a picture-in-picture signal process on the second signal whose scan rate is converted and the digital personal computer signal, accommodating one of the second signal and the digital personal computer signal is displayed on the main screen and the other of the second digital signal and said first digital personal computer signal is displayed on the plurality of sub-screens, or for processing the second signal to be displayed along on the main screen (*Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72*)).

Claim 4:

The claim 4 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of a decoding unit converting the second signal into a digital signal and decoding the second signal; a scan rate conversion unit for converting a scan rate of the decoded second signal.

However, Cheney '283 further discloses the claimed limitation of a decoding unit converting the second signal into a digital signal and decoding the second signal; a scan rate conversion unit for converting a scan rate of the decoded second signal (e.g., Cheney '283 figures 5-6; column 7, lines 19-67; column 8, lines 1-67; column 9, lines 1-8).

Claim 5:

The claim 5 encompasses the same scope of invention as that of claim 2 except additional claimed limitation of a decoding unit converting the second signal into a digital signal and decoding the second signal; a scan rate conversion unit for converting a scan rate of the decoded second signal and outputting the second digital signal.

However, Cheney '283 further discloses the claimed limitation of a decoding unit converting the second signal into a digital signal and decoding the second signal; a scan rate conversion unit for converting a scan rate of the decoded second signal and outputting the second digital signal (e.g., Cheney '283 figures 5-6; column 7, lines 19-67; column 8, lines 1-67; column 9, lines 1-8).

2. Claim 6:

Cheney '283 teaches a method for processing a signal, comprising the steps of:

Dispensing an output signal of a first analog signal directly from a personal computer (*e.g., Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video can be derived from a computer with TV output and therefore, the computer has a signal-dispensing unit dispensing a computer output signal in the form of a first analog signal; see also figures 2-5; column 3, lines 22-40; column 5; column 6, lines 7-25; column 7, lines 19-37*);

Sending the first analog signal to both a conversion unit (*e.g., Cheney '283 discloses in column 6, lines 51-67 that an EGV including* ***the video decoder*** *receives an uncompressed signal is received from a second video source and may either comprise another analog signal wherein Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video signal can be derived from a computer with TV output. The video decoder performs an analog to digital conversion. For example, Cheney '283 further discloses in column 7, lines 1-18 a DMSD 105 digitizing the analog signal for input to the integrated digital video decode system 100 and therefore DMSD 105 performs an analog to digital conversion of the first analog signal. See also figures 2-5; column 5; column 6, lines 25-67*) and an outputting unit (*Cheney '283 discloses in column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72. Although the output 110 is not visually directly connected to the signal dispensing unit, there is a direct mechanism/connection between the signal source, i.e., the computer signal having TV output, and the output 110 so that the video signal is being forwarded. Forwarding means that the video signal from the dispensing unit is being directly sent to the output unit 110*), with the first analog signal being sent to said switching unit ("said switching unit" lacks antecedent basis) without conversion (*column 7, lines 19-38)*;

A signal processing unit (the video decode system 100 of Figs. 4 and 6) performing picture-in-picture signal processing enabling one of the first digital personal computer signal

dispensed by said signal dispensing unit through said analog to digital converter *("the other picture" as described in Cheney '283 which is the digital signal from the DMSD 105 or EGV port*) and a decoded second signal as a second digital signal input from an outside source (*the decoded signal 101 from a first video source such as a cable or satellite source; see Cheney '283 column 6, lines 35-50*) to be displayed on a main screen and the other to be displayed on at least one sub-screen ("*the other picture" as described in Cheney '283 which is the digital signal from the DMSD 105 or EGV port; see column 6, lines 51-67*), and said signal processing unit processing said second digital signal to be displayed alone on said main screen, said second digital signal being any one of a television signal and a video signal (the video decode system 100 processing the signal from the EGV port or DMSD 105 which is the uncompressed signal received from a second video source and may either comprise another digital signal or an analog signal; see column 6, lines 51-67 and column 3, lines 22-40);

Converting the first analog signal to a first digital signal through said conversion unit (*e.g., Cheney '283 discloses in column 6, lines 51-67 that an EGV including* ***the video decoder*** *receives an uncompressed signal is received from a second video source and may either comprise another analog signal wherein Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video signal can be derived from a computer with TV output. The video decoder performs an analog to digital conversion. For example, Cheney '283 further discloses in column 7, lines 1-18 a DMSD 105 digitizing the analog signal for input to the integrated digital video decode system 100 and therefore DMSD 105 performs an analog to digital conversion of the first analog signal. See also figures 2-5; column 5; column 6, lines 25-67*);

Performing picture-in-picture signal processing (the video decode system 100 of Figs. 4 and 6 performing picture-in-picture signal processing) enabling one of the first digital signal of said personal computer generated by the step of dispensing said output signal of said first analog signal (*"the other picture" as described in Cheney '283 which is the digital signal from the DMSD 105 or EGV port*) and a decoded second signal input from an outside source (*the decoded signal 101 from a first video source such as a cable or satellite source; see Cheney '283 column 6, lines 35-50*) to be displayed on a main screen and the other to be displayed on at least one sub-screen (*"the other picture" as described in Cheney '283 which is the digital signal from the DMSD 105 or EGV port; see column 6, lines 51-67*), and processing said second digital signal to be displayed alone on said main screen, said second digital signal being any one of a television signal and a video signal (*the video decode system 100 processing the signal from the EGV port or DMSD 105 which is the uncompressed signal received from a second video source and may either comprise another digital signal or an analog signal; see column 6, lines 51-67 and column 3, lines 22-40*);

Outputting from said switching unit (outputting from the MUX 202), said first analog signal from said personal computer signal (e.g., the output 110 of Fig. 4 directly connected to DENC 107 of Fig. 4) generated from the step of dispensing an output signal in response to a control signal for displaying only said first analog signal from said personal computer (*connected to the computer TV output for receiving the analog video signal 104 from the computer TV output unit which dispenses the analog video signal. Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3)*

support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72), outputting an output signal of the step of performing picture-in-picture signal processing in response to a control signal for displaying said first analog signal of said personal computer and said second signal in picture-in-picture format (*Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72*); and

Amplifying the signal output from said switching unit; and displaying said amplified signal output (A TV monitor automatically amplifying the signal to be displayed; *e.g., figure 3-5; column 6, lines 25-67; column 9, lines 15-67; column 10, lines 1-67; column 11, lines 1-5*).

It is unclear whether Cheney '283 teaches outputting said first analog signal direction from said personal computer. However, Cheney '283 discloses that the analog video signal 104 is received by the decoder system chip 100 and directly being forwarded to the output 110 because Cheney '283 discloses in column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between

decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72. Although the output 110 is not visually directly connected to the signal dispensing unit, there is a direct mechanism/connection between the signal source (i.e., the computer signal having TV output) and the output 110 so that the video signal is being forwarded. Forwarding means that the video signal from the dispensing unit is being directly sent to the output unit 110.

Moreover, Cheney '743 teaches outputting said first analog signal direction from said personal computer (See Cheney '743 column 11-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the video decode system chip of Cheney '743 into the Cheney '283 because Cheney '283 suggests a video decode system chip incorporating an EGV port into an integrated digital video decode system such as a set-top box to process uncompressed analog video stream, to synchronize the output video/audio presentation to the stream and to mix/blend graphics into the output video stream, which may either comprise the uncompressed analog video stream or a merged picture-in-picture video stream including both the decompressed digital video and the uncompressed video wherein the blended stream is then output to the **internal** digital video encoder macro for encoding to television format and thus the analog channel is presented with the same graphical features, function and programming model capabilities as existing digital channels utilizing the integrated digital decode system (Cheney '283 column 8, lines 7-32).

Such modification would have been would have provided a means to use a clock tied to the input stream results in better output picture quality since dropping/repeating of frames to

maintain synchronization is minimized (Cheney '743 column 10-11) and the configuration provides a means to deliver analog sourced input channel such as the analog computer signal to the internal DENC and provides a mixed mode video set-top box application to support viewing conventional analog channels without the added cost and complexity (Cheney '743 column 11).

3. Claims 7-9:

Each of the claims 7-9 is a rephrasing of claim 2, 4 and 5 in a method form. The claims 7-9 are rejected for the same reasons set forth in claims 2, 4 and 5, respectively.

4. Claims 10-13:

Each of the claims 10-13 encompasses the same scope of invention as that of claims 1, 2, 4 and 5, respectively. The claims 10-13 are rejected for the same reasons set forth in claims 1, 2, 4 and 5.

Claim 14:

The claim 14 encompasses the same scope of invention as that of claim 10 except additional claimed limitation of the video signal being selected from the group consisting of a television video signal and non-broadcasted video signal.

However, Cheney '283 further discloses the claimed limitation of the video signal being selected from the group consisting of a television video signal and non-broadcasted video signal (e.g., Cheney '283 column 3, lines 22-40).

Claim 15:

The claim 15 encompasses the same scope of invention as that of claim 10 except additional claimed limitation of a digital to analog converter unit converting the output signal generated from the signal processing unit from a digital signal into an analog signal for the outputting unit and not converting said original first analog signal from said personal computer to said outputting unit and displaying on said monitor said original first analog signal without converting said original first analog signal to a digital signal from said personal computer.

However, Cheney '283 further discloses the claimed limitation of a digital to analog converter unit converting the output signal generated from the signal processing unit from a digital signal into an analog signal for the outputting unit and not converting said original first analog signal from said personal computer to said outputting unit and displaying on said monitor said original first analog signal without converting said original first analog signal to a digital signal from said personal computer (*Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72*).

5. Re Claims 16-19:

Cheney '283 teaches an apparatus for processing a signal, comprising:

A signal dispensing unit dispensing an original first analog signal output from a personal computer (*e.g., Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog*

video can be derived from a computer with TV output and therefore, the computer has a signal-dispensing unit dispensing a computer output signal in the form of a first analog signal; see also figures 2-5; column 3, lines 22-40; column 5; column 6, lines 7-25; column 7, lines 19-37) to a switching unit (Fig. 5) and to a first converter unit (Fig. 4);

Said converter unit converting the first analog signal from said signal dispensing unit to a first digital signal (*e.g., Cheney '283 discloses in column 6, lines 51-67 that an EGV including* ***the video decoder*** *receives an uncompressed signal is received from a second video source and may either comprise another analog signal wherein Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video signal can be derived from a computer with TV output. The video decoder performs an analog to digital conversion. For example, Cheney '283 further discloses in column 7, lines 1-18 a DMSD 105 digitizing the analog signal for input to the integrated digital video decode system 100 and therefore DMSD 105 performs an analog to digital conversion of the first analog signal. See also figures 2-5; column 5; column 6, lines 25-67*) and an outputting unit (*Cheney '283 discloses in column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72. Although the output 110 is not visually directly connected to the signal dispensing unit, there is a direct mechanism/connection between the signal source, i.e., the computer signal having TV output, and the output 110 so that the video signal is being forwarded. Forwarding means that the video signal from the dispensing*

unit is being directly sent to the output unit 110), with the first analog signal being sent to said switching unit ("said switching unit" lacks antecedent basis) without conversion (*column 7, lines 19-38)*;

A signal processing unit (the video decode system 100 of Figs. 4 and 6) performing picture-in-picture signal processing enabling one of the first digital signal from said first converter (*"the other picture" as described in Cheney '283 which is the digital signal from the DMSD 105 or EGV port*) and a decoded second signal as a second digital signal input from an outside source (*the decoded signal 101 from a first video source such as a cable or satellite source; see Cheney '283 column 6, lines 35-50*) to be displayed on a main screen and the other to be displayed on at least one sub-screen (*"the other picture" as described in Cheney '283 which is the digital signal from the DMSD 105 or EGV port; see column 6, lines 51-67*), and said signal processing unit processing said second digital signal to be displayed alone on said main screen, said second digital signal being any one of a television signal and a video signal (*the video decode system 100 processing the signal from the EGV port or DMSD 105 which is the uncompressed signal received from a second video source and may either comprise another digital signal or an analog signal; see column 6, lines 51-67 and column 3, lines 22-40*);

A second converter converting a digital output signal of said signal processing unit into a second analog signal (*e.g., Cheney '283 discloses in column 6, lines 51-67 that an EGV including* ***the video decoder*** *receives an uncompressed signal is received from a second video source and may either comprise another analog signal wherein Cheney '283 discloses in column 3, lines 22-40 that the uncompressed analog video signal can be derived from a computer with TV output. The video decoder performs an analog to digital conversion. For example, Cheney*

'283 further discloses in column 7, lines 1-18 a DMSD 105 digitizing the analog signal for input to the integrated digital video decode system 100 and therefore DMSD 105 performs an analog to digital conversion of the first analog signal. See also figures 2-5; column 5; column 6, lines 25-67);

Said switching unit connected to said second converter (*Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72*) and connected to said signal dispensing unit of said personal computer (*Cheney '283 discloses in column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72. Although the output 110 is not visually directly connected to the signal dispensing unit, there is a direct mechanism/connection between the signal source, i.e., the computer signal having TV output, and the output 110 so that the video signal is being forwarded. Forwarding means that the video signal from the dispensing unit is being directly sent to the output unit 110*), receiving said first analog signal from said signal dispensing unit (Fig. 5) and said second analog signal from said second converter (Figs. 4-

5), said switching unit outputting the first analog signal dispensed from said signal dispensing unit in response to a control signal for displaying only the original first analog signal, and outputting said second analog signal from said second converter unit in response to a control signal for displaying the first analog signal and said second signal in picture-in-picture format (*Cheney '283 discloses in Fig. 5 and column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72*); and

Amplifying the signal output from said switching unit; and displaying said amplified signal output (A TV monitor automatically amplifying the signal to be displayed; *e.g., figure 3-5; column 6, lines 25-67; column 9, lines 15-67; column 10, lines 1-67; column 11, lines 1-5*).

It is unclear whether Cheney '283 teaches said switching unit directly connected to said signal dispensing unit of said personal computer. However, Cheney '283 discloses that the analog video signal 104 is received by the decoder system chip 100 and directly being forwarded to the output 110 because Cheney '283 discloses in column 7, lines 19-38 that the host processor can set the pixel select control to (1) forward the decompressed video on to display; (2) forward the uncompressed video on to display or (3) support picture-in-picture display, dynamically selecting both the decompressed and uncompressed video for display. In mode (3), switching between decompressed and uncompressed video for simultaneous display is done at a rate according to the desired location of the secondary picture 72. Although the output 110 is not

visually directly connected to the signal dispensing unit, there is a direct mechanism/connection between the signal source (i.e., the computer signal having TV output) and the output 110 so that the video signal is being forwarded. Forwarding means that the video signal from the dispensing unit is being directly sent to the output unit 110.

Moreover, Cheney '743 teaches said switching unit directly connected to said signal dispensing unit of said personal computer (See Cheney '743 column 11-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the video decode system chip of Cheney '743 into the Cheney '283 because Cheney '283 suggests a video decode system chip incorporating an EGV port into an integrated digital video decode system such as a set-top box to process uncompressed analog video stream, to synchronize the output video/audio presentation to the stream and to mix/blend graphics into the output video stream, which may either comprise the uncompressed analog video stream or a merged picture-in-picture video stream including both the decompressed digital video and the uncompressed video wherein the blended stream is then output to the **internal** digital video encoder macro for encoding to television format and thus the analog channel is presented with the same graphical features, function and programming model capabilities as existing digital channels utilizing the integrated digital decode system (Cheney '283 column 8, lines 7-32).

Such modification would have been would have provided a means to use a clock tied to the input stream results in better output picture quality since dropping/repeating of frames to maintain synchronization is minimized (Cheney '743 column 10-11) and the configuration provides a means to deliver analog sourced input channel such as the analog computer signal to

the internal DENC and provides a mixed mode video set-top box application to support viewing conventional analog channels without the added cost and complexity (Cheney '743 column 11).

Claim 20:

The claim 20 encompasses the same scope of invention as that of claim 18 except additional claimed limitation of a decoding unit converting the second signal into a digital signal and decoding the second signal; a scan rate conversion unit for converting a scan rate of the decoded second signal.

However, Cheney '283 further discloses the claimed limitation of a decoding unit converting the second signal into a digital signal and decoding the second signal; a scan rate conversion unit for converting a scan rate of the decoded second signal (e.g., Cheney '283 figures 5-6; column 7, lines 19-67; column 8, lines 1-67; column 9, lines 1-8).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw

JEFFERY BRIER
PRIMARY EXAMINER